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THE AFRICAN PITTA AT GEDI RUINS, KENYA

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The African Pitta *Pitta angolensis* is a seldom seen bird in East Africa, partly because it lives in dense forest habitats not often visited by people, but also because it is probably relatively rare (Moreau 1966). Thus it is not surprising that little is known of its natural history (Burke 1969). The following observations are based on 121 sightings of the African Pitta (= Pitta) at the Gedi Historical Monument (Gedi Ruins, Gedi Forest), Malindi, Kenya. The monument is a 44 ha area which protects 13th Century Arab ruins. Except for some clearings around the major ruins, the area is covered with a lowland, semi-deciduous forest, dominated by the large *Commobretum schumanni* and *Gyrocarpus americana* trees, and the smaller *Lecaniodiscus frazarinifolius* in the understorey. All the Pittas were seen on the forest floor.

I lived within the forest from April 1971 to December 1972 while studying the ecology and social structure of the golden-rumped elephant-shrew *Rhynchocyon chrysopygus*. The principal study site was located in the southern third of the forest and consequently all the Pitta observations were restricted to this area (Fig. 1a and Rathbun 1976).

The Pitta was not seen between 6 November 1971 and 22 April 1972. Its absence during this dry period, and its migratory behaviour in eastern Africa generally, are discussed by Britton & Rathbun (1978).

DAILY ACTIVITY

During 1972 47 per cent. of my search time was between dawn and noon and 53 per cent. between noon and dusk: I saw Pittas 74 times during this year, 39 in the morning and 35 in the afternoon period. These figures are not significantly different from the expected number of sightings based on the proportions of my search time before and after noon ($P < 0.5$, χ^2 test). Thus the suggestion by A.D. Forbes-Watson (pers. comm.) that the Pitta might be more active in the morning does not seem to be true at Gedi Ruins.

It has also been suggested that the Pitta may restrict its activity to areas of deep shade, avoiding the frequent patches of sunlight on the forest floor; however, there was no indication of a pattern in the location of the bird sightings at Gedi in this respect.

The Pitta appears to be a very sedentary bird during the time it is at Gedi. I often observed a bird in the morning and, when I returned later in the afternoon, it was seen only 3 or 4 m from its earlier location. On a visit to Gedi Ruins in August 1975 I spotted a Pitta on the morning of 23rd; Tom Huels, a visiting ornithologist, made at least 20 repeated sightings of presumably the same individual during all times of the day over the next two days, always within 10 m of the initial sighting location (Fig. 1a).

FLIGHT REACTION

The African Pitta, despite its rather bizarre colouration, is exceedingly difficult to spot on the poorly illuminated forest floor. Observation is made even more difficult by the bird's motionless foraging strategy. It is most easily detected when the leaf litter is very dry - the bird then produces a characteristic 'crunch, crunch, crunch' sound as it makes large hops on the forest floor. If approached slowly and quietly, the Pitta is very tolerant of one's presence: it takes flight at a distance of about 7 m and, when cautiously approached, it will maintain this distance by hopping away from the observer.

While trapping elephant-shrews at Gedi with brown nylon fishing nets (10 m long, 1 m high, 7 cm mesh) strung loosely along the forest floor, I accidentally captured four Pittas. I netted a fifth Pitta, after frequently seeing it in the same area for many weeks, by taking advantage of its tolerant and cautious retreat behaviour and slowly herding it into a previously strung elephant-shrew net (see 'Red Pitta' below).

If a Pitta is suddenly startled or is persistently disturbed, it will take flight and usually flies directly to a limb about 3 m above the ground and perches motionless, as described by Mackworth-Praed & Grant (1957). If further disturbed, it will fly away through the forest at about the same height, but if left undisturbed it will drop to the forest floor in a few minutes.

I heard no vocalizations nor the wing flapping sound produced by perching birds as described by Chapin (1953).

FORAGING BEHAVIOUR

The most common foraging pattern I observed was that of a lone bird standing motionless on the forest floor and presumably listening and watching for invertebrates in the 3-5 cm deep leaf litter. These periods of watchful immobility lasted for approximately 3-5 min, after which the bird hopped 1 or 2 m away to a new location. When a prey item was detected, the Pitta hopped and then lunged towards the item, and captured it with its bill. On one occasion I saw an individual forage by sweeping the leaf litter aside with its bill, then pausing for one or two seconds with its head turned to one side, presumably examining the newly cleared spot for prey items. The only food items eaten which were large enough to be identified were 10 cm-long earthworms. The worms were ingested by being slowly mandibulated and partially swallowed several times before they were finally swallowed entirely. This food item was not found in the stomachs examined by Harvey (1935). My overall impression of the Pitta's foraging behaviour is that it is very thrush-like.

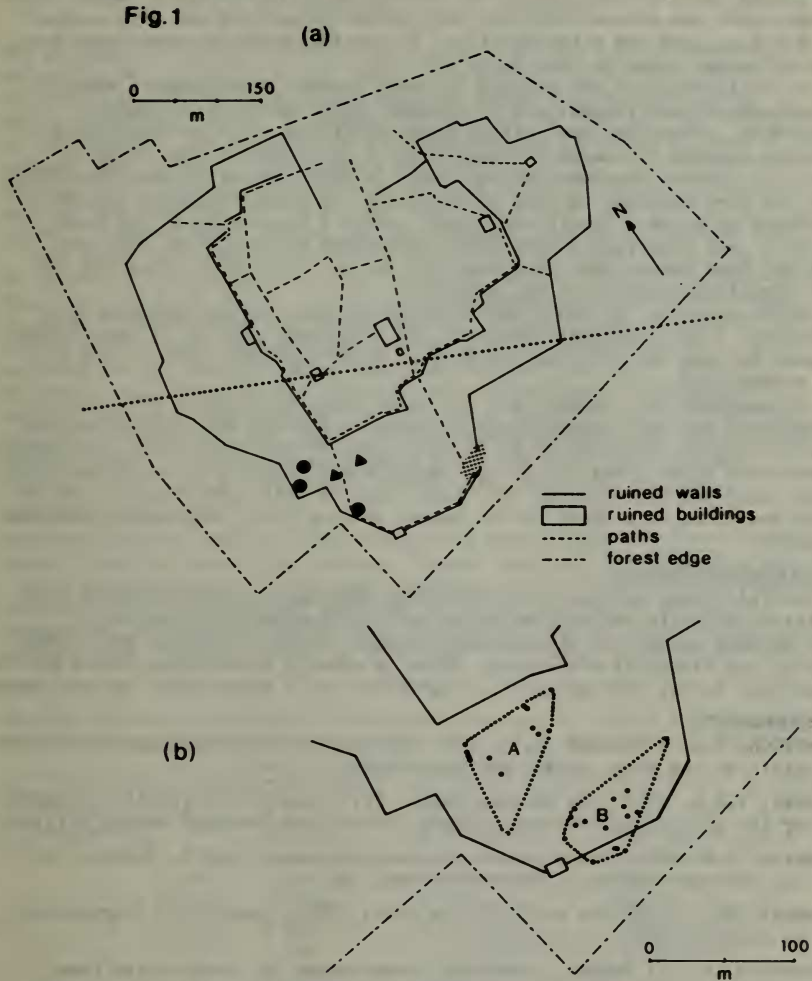


Fig.1 a) Map of Gedi Historical Monument, showing main study area within the ruins (south of heavy dotted line) and African Pitta sighting loci for 1973 (●), 1974 (▲), and 1975 (shaded). The 1975 area represents about 20 sightings over three days

b) Home ranges of two African Pittas within the main study area in 1972. A = 'Red Pitta', B = unmarked Pitta

HOME RANGE

I ringed three of the five Pittas netted; two with E.A.N.H.S. metal rings (the right leg on one bird, the left on the other) and one with a metal E.A.N.H.S. ring and a red PVC ring. I only resighted the red-ringed bird, which became known as 'Red Pitta'.

In 1972 Red Pitta was sighted 13 times between 24 September, when it was captured and ringed, and 22 October, after which it presumably migrated. Connecting the loci of these sightings so as to construct a convex polygon (Jennrich & Turner 1969) I calculated a home range of 3523 m². During the same period I made 14 sightings of an unringed Pitta in the area adjacent to that of Red Pitta. If these sightings are considered to be of a single individual, which I believe to be the case, then it was occupying a home range calculated to be 3056 m². The two birds' home ranges were very near one another (Fig.1b), exclusive, and no territorial behaviour was observed.

While carrying out the elephant-shrew research during September and October, I systematically searched the study area portion of Gedi Forest every day and saw only the two Pittas, which indicates that it was not a common bird.

I completed the research and left Gedi Ruins in December 1972, but I revisited the area subsequently in order to monitor the elephant-shrews on 27 October 1973, and 17 to 21 June 1974. On the first visit I resighted Red Pitta three times and on the second visit twice (Fig.1a). These five loci were all close to the 1972 home range of this individual. I did not see Red Pitta on a visit to the forest in June 1975, despite an intensive search.

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